

REMARKS

In the September 10, 2010 Office Action, all of the claims stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the September 10, 2010 Office Action, Applicant has amended claims 27 and 40 as indicated above. Thus, claims 27-29, 31-33, 35-42, 44-46 and 48-54 are pending, with claims 27 and 40 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Interview Summary

On December 8, 2010, the undersigned conducted a telephonic interview with Examiner Gregory D. Clark, who is in charge of the above-identified patent application, and Supervisory Patent Examiner Lawrence Tarazano. Applicant wishes to thank the Examiners for the opportunity to discuss the above-identified patent application during the Interview of December 8, 2010.

Basically, the undersigned proposed amending independent claims 27 and 40 to clarify that the corrosion resistant hydrophobic organic paint material having affinity with respect to both the plate substrate with the rolling oil remaining on the surface and the hydrophilic coating. The undersigned then argued that Mizutani (US 6,013,724), Kamiya (JP 08-269367A) and/or Chinnin (US 5,342,871) fail to disclose the arrangements of the independent claims, especially as now amended, as explained in the following paragraphs. Agreement was reached during the interview the arguments presented during the Interview are persuasive. However, the Examiners indicated that the independent claims are confusing and not clearly organized. The Examiners requested that Applicants amend the independent claims 27 and 40 to make the claims easier to read and better organized. In response, the undersigned has amended independent claims 27 and 40 as requested by the Examiners to make these claims easier to read and more clearly organized.

The object of Mizutani (6,013,724) is about the resistance to raindrop fouling (See “OBJECTS OF THE INVENTION”) and is about the appearance of the film (See Column 43 lines 13, Column 61 lines 3, 11). Mizutani fails to disclose or to suggest the use for the heat-exchange-fin.

The object of Kamiya (JP 08-269367A) is about the heat-exchange-fin having high heat-transfer efficiency even in the oily atmosphere because of the water-shedding coating. There is no common technical point between Mizutani and Kamiya. There is large difference in technical fields between Mizutani and Kamiya.

The claimed invention permits simplifying a process by eliminating an oil removing step. So oil remains on the surface of the plate substrate. A surface of plate material is covered by the substrate coating with a corrosion resistant hydrophobic organic paint material. Then we faced a new problem to be solved that the corrosion resistant hydrophobic organic paint material should have affinity with both the plate substrate with the rolling oil remaining on the surface and the hydrophilic coating. Applicants tried many kinds of materials through a trial and error process. After that, finally Applicants arrived at the claimed corrosion resistant hydrophobic organic paint material. The corrosion resistant hydrophobic organic paint material, coated by a hydrophilic paint material, includes two-component resin and alcohol-based solvent being 1 to 10 wt%. At least this point of claims is not disclosed and suggested in any prior art.

This is discussed in the instant application and is contrary to the typical methodologies of prior art coating (discussed on pages 1-2 of the instant application – Background). Specifically, the prior methodologies desire to clean off rolling oil. Evidence is presented of this point in the instant application. This is contrary to the assertion on page 5 of the Office Action. The assertion on page 5 of the Office Action is untenable in view of this evidence. Moreover, the assertion on page 5 of the Office Action that some unexpected result has not been shown is untenable. By the claimed arrangements, an oil cleaning step can be eliminated, yet an effective coating can be provided. This is unexpected since normally oil must be cleaned in order to produce an effective coating. This is discussed in the instant application with reference to prior art publications. Even if the references relied upon to reject the claims are silent with respect to removing oil, this does not mean (by omission) these references disclose leaving rolling oil. Rather, the references are also silent

with respect to rolling oil remaining. Other prior art cited by Applicants and discussed in the instant application teaches that it is necessary to clean off rolling oil contradicts the assertions made on page 5 of the Office Action.

In addition, Mizutani disclosed that chromate treatment on the surface of the aluminum fin is preferable. About our invention, on the other hand, the making heat-exchange-fin without chromate treatment is preferable (See "BACK GROUND OF THE INVENTION").

With the method (1), the equipment cost is large because it is necessary to use a prescribed treatment layer and the running cost is high because harmful waste liquid is discharged from the process and must be treated.

REFERENCE

In order to rely on a reference as a basis for rejection of the applicant's invention, the reference must either be in the field of the applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. See *In re Deminski*, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed.Cir.1986).

Rejections - 35 U.S.C. § 103

In paragraphs 1-11 of the Office Action, claims 27-29, 31-33, 35-42, 44-46 and 48-54 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Publication No. 8-269367 (Kamiya) in view of U.S. Patent Nos. 6,013,724 (Mizutani) and 5,342,871 (Clinnin). In response, Applicant has amended independent claims 27 and 40 as mentioned above. Applicants respectfully traverse this rejection as explained during the telephonic Interview, especially in view of the clarifying Amendments to independent claims 27 and 40.

Specifically, independent claim 27 recites a plate substrate being free of protrusions and depressions of submicron order oriented in a thickness direction thereof with a rolling oil being used and remaining on the plate substrate; a substrate coating formed on a surface of the plate substrate with a corrosion resistant hydrophobic organic paint material, the corrosion resistant hydrophobic organic paint material including a coating film component, the coating film component being a two-component resin, and an alcohol-based solvent, a

content of the alcohol-based solvent being 1 to 10 wt% when the corrosion resistant hydrophobic organic paint material is applied; and a hydrophilic coating made of a hydrophilic paint material being provided on a surface of the substrate coating, the corrosion resistant hydrophobic organic paint material having affinity with both the plate substrate with the rolling oil remaining on the surface and the hydrophilic coating.

Similarly, independent claim 40 recites preparing a plate substrate being free of protrusions and depressions of submicron order oriented in a thickness direction thereof and having a rolling oil on a surface of the plate substrate; applying a corrosion resistant hydrophobic organic paint material on the rolling oil which is on the surface of the plate substrate for forming a substrate coating, the corrosion resistant hydrophobic organic paint material including a coating film component, the coating film component being a two-component resin, and an alcohol-based solvent, a content of the alcohol-based solvent being 1 to 10 wt% when the corrosion resistant hydrophobic organic paint material is applied; and providing a hydrophilic coating on a surface of the substrate coating by applying a hydrophilic paint material, the corrosion resistant hydrophobic organic paint material having affinity with both the plate substrate with the rolling oil remaining on the surface and the hydrophilic coating.

As argued during the telephonic Interview, the claimed invention permits simplifying a process by eliminating an oil removing step. So oil remains on the surface of the plate substrate. A surface of plate material is covered by the substrate coating with a corrosion resistant hydrophobic organic paint material. Then we faced a new problem to be solved that the corrosion resistant hydrophobic organic paint material should have affinity with both the plate substrate with the rolling oil remaining on the surface and the hydrophilic coating. Applicants tried many kinds of materials through a trial and error process. After that, finally Applicants arrived at the claimed corrosion resistant hydrophobic organic paint material. The corrosion resistant hydrophobic organic paint material, coated by a hydrophilic paint material, includes two-component resin and alcohol-based solvent being 1 to 10 wt%. At least this point of claims is not disclosed and suggested in any prior art.

This is discussed in the instant application and is contrary to the typical methodologies of prior art coating (discussed on pages 1-2 of the instant application – Background). Specifically, the prior methodologies desire to clean off rolling oil. Evidence

is presented of this point in the instant application. This is contrary to the assertion on page 5 of the Office Action. The assertion on page 5 of the Office Action is untenable in view of this evidence. Moreover, the assertion on page 5 of the Office Action that some unexpected result has not been shown is untenable. By the claimed arrangements, an oil cleaning step can be eliminated, yet an effective coating can be provided. This is unexpected since normally oil must be cleaned in order to produce an effective coating. This is discussed in the instant application with reference to prior art publications. Even if the references relied upon to reject the claims are silent with respect to removing oil, this does not mean (by omission) these references disclose leaving rolling oil. Rather, the references are also silent with respect to rolling oil remaining. Other prior art cited by Applicants and discussed in the instant application teaches that it is necessary to clean off rolling oil contradicts the assertions made on page 5 of the Office Action. Based on the above arguments and amendments, withdrawal of this rejection of independent claims 27 and 40 is respectfully requested.

Under U.S. patent law, the mere fact that the prior art can be modified does ***not*** make the modification obvious, unless an ***apparent reason*** exists based on evidence in the record or scientific reasoning for one of ordinary skill in the art to make the modification. See, KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some "apparent reason to combine the known elements in the fashion claimed." Id. at 1741. The current record lacks any apparent reason, suggestion or expectation of success for combining the patents to create Applicants' unique arrangements of independent claims 27 and 40. Specifically, even if combined as suggested in the Office Action at least some limitations of independent claims 27 and 40 would still be lacking from a hypothetical combination, as explained above.

Moreover, Applicant believes that dependent claims 28, 29, 31-33, 35-39, 41, 42, 44-46 and 48-54 are also allowable over the prior art of record in that they depend from independent claim 27 or 40, and therefore are allowable for the reasons stated above. Also, dependent claims 28, 29, 31-33, 35-39, 41, 42, 44-46 and 48-54 are further allowable because they include additional limitations, which in combination with the limitations of their respective independent claims, are not disclosed or suggested in the prior art of record..

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Reply to Office Action of September 10, 2010

Accordingly, withdrawal of this rejection of these dependent claims is also respectfully requested.

Prior Art Citation

In the Office Action, additional prior art references were made of record. Applicant believes that these references do not render the claimed invention obvious.

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In view of the foregoing amendment and comments, Applicant respectfully asserts that claims 27-29, 31-33, 35-42, 44-46 and 48-54 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested. If there are any question regarding this Amendment, please feel free to contact the undersigned.

Respectfully submitted,

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